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Research paper

Net@ccessibility: A research and training project regarding the transition from formal to informal learning for university students who are developing lifelong plans

Web@ccessibilité : recherche et formation, du formel à l'informel pour les étudiants d'université dans le développement du projet de vie

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ABSTRACT

The principal objective of the research project is to create inclusive and accessible environments on the Web, using technologies in an innovative manner in terms of their pedagogical and didactic aspects, and to enable people with disabilities or special needs to enjoy equal opportunities and participate in university matters. Diversity is viewed as an asset in the field of relationships and learning for all. The project also aims to demonstrate the possibilities of learning and knowledge-building in the transition from informal to formal learning. The experimental research was carried out in an academic context involving students, professors and tutors (2297 students, 56 professors and 33 e-tutors). The e-tutors, who aimed to become "inclusive e-tutors", took part in a research-action

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program and received field training during their mentoring activities. Their ultimate goal, in collaboration with professors and students, was to create an environment both inclusive and accessible for everyone. During the research, participants built models of interactive training. Development of the use of ICT through an interactive and inclusive approach that deals with issues relating to pedagogical and technological accessibility, confirmed the working hypothesis. Another key result was the discovery that relationships and interactions can modify the methods of teaching to make curricula more flexible and accessible.

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RÉSUMÉ

Les principaux objectifs de la recherche consistent à créer des environnements inclusifs et accessibles sur le Web, en utilisant de manière innovante les technologies, en cohérence avec les aspects pédagogiques et didactiques, afin d'offrir l'égalité des chances aux personnes en situation de handicap ou ayant des besoins spécifiques pour leur permettre de participer à la vie en milieu universitaire. La diversité peut être une valeur dans les relations et l'apprentissage pour tous. La recherche entend également démontrer les possibilités d'apprentissage et d'élaboration des connaissances au niveau de la transition du formel à l'informel. Le travail de recherche expérimentale se développe ainsi dans un contexte universitaire qui implique la participation des étudiants, des professeurs e des tuteurs (2297 étudiants, 89 professeurs et e-tuteurs, dont 33 tuteurs). Les tuteurs, destinés à devenir des e-tuteurs inclusifs, participent dans le cadre d'un parcours de recherche – action. Ils se forment en situation, pendant le travail de tutorat, en vue de construire avec les professeurs et les étudiants un environnement inclusif et accessible pour tous. La recherche se propose ainsi d'élaborer des modèles de formation interactive. Développer l'utilisation des TIC dans une approche interactive et inclusive, tout en tenant compte des questions relatives à l'accessibilité pédagogique et technologique, nous a permis de confirmer l'hypothèse de recherche. Les résultats mettent en évidence que les relations et les interactions peuvent modifier les méthodes d'enseignement pour rendre le curriculum plus flexible et accessible.

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1. E-learning and E-tutoring

The benchmarks identified by the EU include all measures aimed at ensuring opportunities, full access and inclusion so as to improve the conditions of equality in educational and training contexts (these concepts were reaffirmed at the 2006 Spring European Council). The transformation of higher education systems in Europe, initiated in the Bologna Process, focuses as its main cornerstones on education credits; it also promotes acknowledgement of education credits, with specific reference to personal professional and cultural experiences.

The creation of virtual communities has produced aggregation networks: forums for public debate characterized by a level of emotional involvement high enough to lead to the formation of networks of personal social relations in cyberspace Rheingold (1994). These networks have evolved considerably,

and have proposed tools and solutions that represent renewed challenges to extant methods of building/accessing/sharing knowledge. Specifically, Web 2.0 tools that enable aggregation, cooperation in content creation, writing and bookmarking are already available.

The potential offered by Web 2.0 to academic communities is still largely unexplored, and not only at a national level. This is especially the case when we refer to a heterogeneous student target group, i.e. one that includes or may include individuals with social disadvantages, cultural diversities or disabilities.

In Italy, special-education means integrating education (cf. the many papers on these issues published by the special-education group http://www.pedagogiaspeciale.it) in harmony with the logic promoted by the WHO through the ICF, which proposes a focus on modes of functioning in relation to contexts, and on promoting participation in order to overcome problems associated with disease and disability. This logic attributes unique value to treatment and education in education-related situations, and posits the relativity of irreversible disability regardless of its nature. Italy made a cultural and political choice in this matter, for the principles that inspired it were shared, and it generated legislation aimed at guaranteeing all citizens' full rights to be educated in schools and to participate in social life. This process has enabled individuals with disabilities to achieve the highest levels of education. All children now attend mainstream schools, and thanks to their integration, at present many students with disabilities – approximately 16,000, including those with particularly serious conditions – attend universities.

At the international level, a number of research networks have been developed to keep track of actions aimed at transforming school, university and social environments (e.g., the Helios and Equal projects). The coordinator and some partners of our project take part in foreign university groups belonging to the UNICA network, Ortelius, the Fedora project, Handinet, and OECD projects (research units [RU] 1, 2 and 4).

In Italy, starting in the early 1990s action was taken on the specific problem of integrating students with disabilities in universities pursuant to Law no. 104/1992, as amended. At the 1995 International Conference held at Rome Three University, there were very few universities that had tried to deal with this issue. Satisfactory data were not yet available for the first survey carried out by Italy's Ministry of Universities, Education and Research (MIUR), which presented its findings on that occasion. Later on, after Law no. 17/1999 required the appointment of chancellors' representatives and the creation of an integration service and specialized tutoring, all the universities started to organize themselves to meet these requirements. Resources are ever more limited, while the number of students with disabilities continues to rise, but a National Commission of University Disability Representatives has been set up by the Conference of University Chancellors, and guidelines have been approved by all the disability representatives. These guidelines deal with the relationships between schools, universities and professional training. Italy, which has interpreted inclusion policies by developing them above all through the school system, has also enacted effective legislation for adult disabled workers (Law no. 68/99). Thus efforts are needed to open the possibilities of infrastructural life qualities able to attract widespread support.

Dialogue has been established with other universities with regard to relationships among technology, assistance and training. Participants reflect on and try to improve situations concerning university students with disabilities, and have an increasingly strong vision of how to involve other students in order to create forms of tutoring on an equal footing.

2. Project profile and aims

The research project was financed by Italy's Ministry of Education, University and Research, and seeks to demonstrate how an inclusive environment can be established in an academic context. All undergraduates, including students with disabilities, were involved in the formal and informal courses.

One of the main aims of the *Fondo per gli Investimenti della Ricerca di Base* – Basic Research Investment Found FIRB project "Net@ccessible: Teaching – Learning for One and All in a Lifelong Plan" was to implement teaching-learning with and for all in a lifelong plan. The first step was to create a suitable user-friendly technological environment on the Internet and to train participants in its use with a focus on inclusion and special-education.

Web 2.0 supported integration of the project's pedagogical and technical aspects. Furthermore, it stimulated all the research units (RUs) to participate in developing advanced scientific methodologies applicable in the pedagogical-didactic field.

The research started 3 years ago and involved the following RUs: the University of Rome "Foro Italico" as project coordinator, Rome Three University, the University of Bologna, the University of Trento, the Federico II University of Naples, and the Don Gnocchi Institute of Milan.

The research was carried out in an academic context, both in classrooms and on a platform. All the above mentioned RUs and 2297 university students, 56 professors and 33 e-tutors had active roles in this project. Its implementation met all relevant deadlines.

The participants learned to use the Web in different creative ways. To achieve our aim, we created a platform that embraced three research areas defined by their functions.

2.1. Research area

The research area, used for coordinating research, exchanging ideas and materials, and discussing project actions. This is the area for project management, document sharing for internal use of products, and compiling bibliographies (during collaboration) relevant to the ongoing scientific work. To facilitate communication among the units, this area also serves as the bulletin-board for news about relevant meetings, conferences and scientific events. It was the location of the Cinema and Inclusion database used for Skype workshops and meetings. Using the Web facilitated reflection and exchanges of opinions and ideas, promoted collaboration among researchers and developed the project's interdisciplinary perspective.

2.2. E-tutor area

The e-tutor area, structured for training e-tutors' online. This area is the place where mediators can be found. Their job is to handle the relational and communication processes by connecting teachers and students. The e-tutor Area was set up as a network in which to exchange knowledge and create relationships. E-tutors are experts in inclusion processes; they are professionals who have technical, pedagogical, methodological and relational skills. Interactive sections and places for publishing writings were identified to involve e-tutors in collaborative work on individual skills, as described in the Implementation Model.

2.3. Learning and updating area

The learning and updating area, an open field for students who are taking professional and training/learning courses. This area was designed to promote the culture of inclusion and participation in academic life, to facilitate exchanges of experiences and to encourage social interaction. Thus the university becomes a meeting place where each individual enriches the environment; here diversity is put to advantage and each person's specificity and uniqueness is acknowledged. This area is divided into three sections:

- a help desk, dedicated to all the technical questions related to the platform and to thoughts about online learning and its pedagogical-methodological effects;
- the "self-reflection" area stimulates thinking about diversity as an existential condition that describes each individual. The activities promote "self-reflection" on the students' progress through life and on their specificity. Moreover, "self-reflection" suggests that diversity is not a special way of being; rather, it is a universal condition of human life influenced by the contexts in which people live;
- the agora, the most informal area: it operates much like a social network, where students can communicate and exchange opinions. The Cinema and Inclusion database can be consulted in this area. Active student participation has helped enlarge the database. Information is archived here by both date and alphabetical order, together with discussions of special-education topics (Fig. 1).

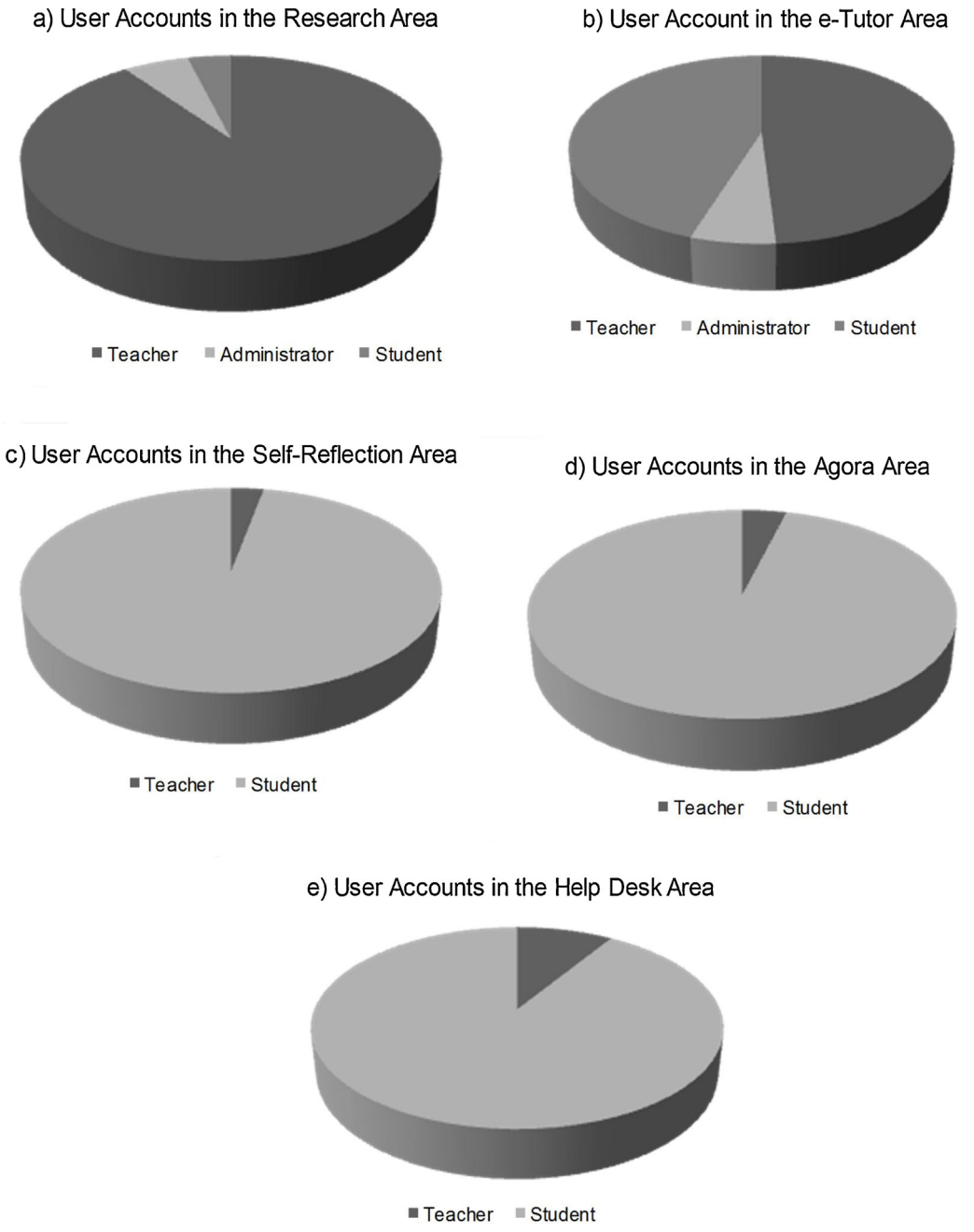

Fig. 1. User accounts in all the areas of the platform.

All coursework was completed in the third and last year of the research project, except for some special cases. The focus was on evaluating the results and building inclusive technological teaching models. In light of the results, the project partners are going to run the experiment.

3. Phases and aims of the experiment

The experiment focused on:

- research on socio-pedagogical and socio-technological methods that aim to improve student integration, especially the integration of students with disabilities. E-tutors are people who have been trained in special-education by the project itself or have technological skills;
- evaluation of the involved students' formal learning and the processes of acquiring interdisciplinary skills (problem-solving, reflection and the expression of one's own ideas);
- building supports and devices that can facilitate and assist individuals' learning processes;
- strengthening the Web logic and its interdisciplinary nature. If all actors have their own specific role in relation to others, everybody can have a chance to fulfil their own potential;
- organization of joint actions, which involve incoming services for undergraduates with disabilities, the online tutor system, families and regions.

4. Actions implemented

The project's achievements, judged against its working hypothesis, can be described as follows.

4.1. Technology and pedagogy

Technology and pedagogy were linked in a blended model of formal courses designed to create an integrating background[1] (Canevaro, Lippi, & Zanelli, 1988). The research focused on synergy between special-education skills and online tutoring. The latter was accomplished through training courses (attended by 2750 students) on special-education topics and online didactics for inclusion along an interdisciplinary path.

4.2. The training of e-tutors aimed to use ICT to create an innovative training model

Moreover, the development of pedagogic mediation required competence in helping to become an answer to educational needs without replacing any action on the student's part (de Anna, 2009). The mediation encouraged the development of multiple competencies, such as sensitivity, with which to create flexible and open models that facilitate and develop higher functions. The training of e-tutors consisted of preparing specific documents regarding special-education and inclusion through traditional and online training modules, and work experiences. The following topics were included in e-tutor training:

- coordination and organization of Web communication;
- relationships and communication among e-tutors, between e-tutors and students, and between e-tutors and professors;
- indications about special-education methods and topics;
- tools and methods for promoting cooperation among the participants;
- human and technological mediators for inclusive didactics.

The group of special-education professors (RU Foro Italico in collaboration with Marisa Pavone, and Antonello Mura) developed an assessment survey of the e-tutors, thereby involving them in the

[1] The term "integrating background" means both a methodology of educational planning and a teaching tool used in the context of inclusive education for pupils with disabilities.

process of further validating the training model. The survey tried to sketch out a future inclusion model without any specific focus on disability, but rather attempting to guarantee 'learning for all' while paying special attention to everybody's specificity.

This training was designed to deal with all the interdisciplinary topics in order to consolidate and harmonize the participants' preparatory background. The specific issues covered included:

- how to handle the new concept of disability established in the International Classification of Functioning, Disability and Health (ICF), since it refers not to diseases but rather to participation and the development of personal potential. Hence the notion of situation of disability, i.e. the "condition of a person with disability in an unfavorable environment";
- how the project could introduce facilitators and avoid producing obstacles; how it would create universities that are "accessible" both culturally and structurally;
- a focus on the concept of "life plans" for students with disabilities, taking into account the model of university training suggested in the FIRB project.

The learning model adopted in the project was one of shared knowledge-building. It was thought essential to strengthen genuine collaborative relationships and to deepen the special-education context, which is already shifting from formal knowledge to the informality of relationships.

The e-tutors reported that their meetings and discussions with the professors played a very important role, regardless of their own disciplinary areas. They emphasized that the meetings encouraged them to overcome their initial resistance to the heterogeneity of their basic training. They had been chosen to join the project on the basis of their technological and special-education skills. Although at first their differences seemed to be limitations, as time went on they were transformed into personal resources during the group work (negotiation and the modelling of interventions and contents), and they facilitated the creation of positive interdependency and continuous implementation of inclusive theories. The blended model can be considered the best choice for further training in the field of special-education.

As expected, the e-tutors' initial skills had to be retrained in order to formulate their profile in the Web 2.0 field (Rotta & Ranieri, 2005; Salmon, 2002; Wenger, 2006).

A Moodle-based syllabus was defined to indicate the skills, methods and tools needed by e-tutors to teach student-centred classes online (RU Trento).

Since the number of students with disabilities enrolled in Italian universities has risen significantly over the last few years, e-tutors need to be able to meet the requirements of all the students who take their courses. Accordingly, the e-tutors were trained in technological, pedagogical, didactic and psychological subjects so that they would be able to teach well-organized online courses. During their training, they had an opportunity to experiment with the practical implementation of teaching models and actions in the classroom. The innovative feature in e-tutor training was the development of knowledge and skills through individual and collective reflections on professional issues and topics (pedagogy and andragogy, special-education, didactics, evaluation and self-evaluation, network technology and methodology). The e-tutor has to evaluate the diversity and uniqueness of every person in order to help him/her create a personal and professional profile. The e-tutors play different roles, depending on the implicit or explicit contexts or didactics. Their roles vary according to the different models and to the traditional e-learning model (Maragliano, 2011). They supply and organize digital materials (model A); other methods serve to create a community, to develop activities and to share contents (model B). Thus the e-tutor functions as a mediator among students, didactic materials and the method of the platform, and also provides support for interaction, especially in the Cinema and Inclusion database.

Consequently, it has become obvious that there is a plural didactics in e-tutor training, from reproductive to productive didactics.

4.3. Analysis model of the teaching/learning accomplished in each RU

In addition, a rubric for evaluating the screen cast was created. The adASTRA rubrics were revisited and elaborated according to Sloan-C, an American consortium that has been working on online

learning for many years. Accordingly, the main features of a good online course concern the methods for monitoring individual characteristics, for planning and for creating course-management tools. The rubrics were presented and shared so as to deal with related didactics. The adASTRA rubrics are not reduced to a kind of criteria checklist; a rubric, rather than being a class list, suggests how to create a good online course. In keeping with the aims of the FIRB project, another rubric was created on accessibility, in order to create online courses that can guarantee access and learning for all. This rubric satisfies the principles and standards of World Wide Web Consortium (W3C) according to Italy's Law 4/2004 and Ministerial Decree of 25 July 2005. Both requirements were useful for meeting at least the "Double A" criteria. A tight organization and close monitoring were necessary to guarantee the quality of online courses. The Trento RU investigated methods and techniques for e-research (i.e., managing and sharing the FIRB platform, virtual meetings, forum participation, asynchronous discussions) to foster efficient and effective collaboration (Anandarajan, 2010; Anderson & Kanuka, 2003). The adASTRA rubrics were validated by specially trained e-tutors, and validation forms were differentiated for the various student groups (with particular attention to students with disabilities) taking the platform courses (Ghislandi, 2012).

4.4. Study of possibilities linked to help in reducing and overcoming disabilities with didactics

Another innovative feature of the project was the study of possibilities linked to help in reducing and overcoming disabilities with didactics. In particular, the Don Gnocchi Institute implemented mainly technical improvements, while the other RUs dealt with didactic and special-education issues. To be more precise, the didactic innovation was implemented by hiring mediators capable of developing a dynamic that would reduce and overcome disability. The assistance element is seen as a compensatory means with which an individual can become what she/he really is or would be without any disability. In this case, aid functions as a prosthesis. This research is not limited to ways to aid students with disabilities; it is also for marginalized people, hence it aims to improve didactics for everyone. On this basis, it was possible to involve university professors who had already used the Moodle platform for some of their courses.

The Bologna RU, for example, collaborated with and in the service of Alma Mater Studiorum, which operates e-learning and university platforms. The result was that students less skilled in computer technology, Web 2.0 and e-learning platforms achieved satisfactory result thanks to the FIRB platform. The presence of e-tutors was and is certainly vital, since they can intervene when students have problems.

The platform represented a real opportunity for experimentation in an e-learning context, using different Web 2.0 technologies. These were also used in teaching in an informal environment, thereby influencing the individual's life progress and enhancing social inclusion.

Thinking of the platform as an inclusive and accessible environment created possible situations in which anonymous participation was also accepted. The students were thus free to decide whether or not to share knowledge of their disability.

5. Training and refresher courses

In the 3 years since the project began, approximately 30 training courses have been created with different methods, and have involved students and professors at the following universities: Rome's Foro Italico University, the University of Bologna, the University of Naples and a number of French and Brazilian universities. The real challenge was to create heterogeneous training courses that would meet the needs of different universities and students. The project started in 2009 as a continuation of a program called "Socialization of People With Disabilities at Work", which had been developed by the Cavazza Institute's Training Science faculty, whose members also took part in the project (most of them as tutors or corporate representatives). The Net@ccessible platform interested a number of professors, who chose to use it for their courses (e.g., at Bologna). The students could work in an interactive environment, testing didactic use of the Web and of the collaborative strategies. The professors and e-tutors gave the students useful feedback about their work, while their active presence enriched and transformed the context.

The research found that the connection between students and tutors, and use of the cooperative model in an online activity, depended closely on the amount of work that the student did. Learning is the meeting point of diversity. Socialization can be achieved through learning (Canevaro, 2001). This has been proved by implementing a process that records the transition from informal learning to formal acknowledgement of learning. In particular, the experience of a course called "Didactics and Special-Education" at the Foro Italico University's Motor Science faculty was significant because informal learning processes – e.g., those that refer particularly to personal, professional and cultural experiences (the Bologna process, 1999) – could be used to earn academic credits (ECTs).

At the University of Bologna and the Cavazza Institute, online courses enabled students to earn ECTs. The Federico II University of Naples, for example, delivered courses on Teaching, Didactics and Special-Education, during which the concepts of diversity and individuality were discussed with students from other RUs, starting with the identification of learning styles and individual cognitive styles. Moreover, the students could access different contexts while paying constant attention to the topic, and had opportunities to explore a multimedia map. In this case, the training credit did not seem useful since all the activities were experimentally included in the examination schedule. This experience aimed to show the value of interdisciplinary skills and knowledge-building in a teaching field. The University of Naples' undergraduate course in Psychological Science and Techniques includes all the pedagogy courses given at the faculty of Letters and Philosophy, and two ECTs can be earned for activities performed on the platform.

The overarching goal of our project was to create support for and facilitate processes of learning for all. Furthermore, it has focused attention not only on disability issues, but also on the introduction of inclusive and accessible learning for all, without diminishing anyone's specificity. The Federico II University of Naples RU worked particularly in the following areas:

- identification of contexts and settings for the development of tools and devices useful for depicting an individual's cognitive profile;
- study of the possibilities offered by the use of e-learning to facilitate, monitor and assess learning processes, in collaboration with the RUs of Rome Three, Trento and Don Gnocchi.

Interdisciplinarity was one of the project's basic principles. It is a way of putting into practices the principles and fundamentals of special-education. Its purpose is to give accurate responses to a person's special needs – see also the notion of widespread competence – starting from implicit family competencies and arriving at explicit and assessable professional competencies (Canevaro, 2008a,b). Thinking from the other side's structural perspective means using the Web to create satisfactory links, connections and solutions to special needs. However, it is better to avoid any situation in which only a few people take responsibility for responding to the disabled person's needs.

6. Disability-support service

The organization of a joint action that involves university support services for the disabled, online tutoring, families and the region ensured full participation of students with more or less serious disabilities. The use of ICT and of appropriate pedagogical strategies allowed students with disabilities (most from the universities of "Foro Italico", Bologna, "Federico II" [Naples] and Rome Three) to participate in online learning. Twenty-five students with disabilities studying at the Physical Education faculty at the "Foro Italico" University of Rome participated in the program; three of them had physical disabilities (two people with hemiplegia and mild cognitive delay, and one deaf person). Initially the students were assisted by e-tutors who constantly collaborated with the disability-support service. Direct knowledge of the students and the connection with the disability-support service made it possible to identify problems in relation to regulatory implications and to administrative and managerial requirements. By linking the individual's needs to the group's, these problems were turned into opportunities for growth and education for all (de Anna, 2007). The construction of learning environments and an accessible online peer community through collaborative learning, project work and the implementation of metacognitive strategies led to the development of students' prosocial skills, encouraging the creation of informal networks for making friends and joining mutual help groups. Of

all the students with disabilities registered with the service for disabled and dyslexic students at Alma Mater of Bologna, three blind students, two dyslexic students, two with other physical disabilities (one with severe problems), and one in the process of overcoming disease took part in the program. In especially complex disability cases, a database program was implemented, mainly on the cinema and open forums, to enable students to achieve three objectives:

- socialize with other students through the use of forums;
- deepen their knowledge of computer science, computer usage and Web tools;
- use the cinema database to expand and enrich their knowledge in preparation for their upcoming exam in film analysis.

This pathway was initially supported by a tutor who guided the students in using the program and its tools. One student is still enrolled in the program. The other students with disabilities and/or dyslexia took courses related to their own academic interests; they encountered no difficulty in using the program.

The Naples RU monitored ten students with disabilities who had enrolled in the program. The sample group, identified from among the students tutored by the SINAPSI center, was recruited mainly according to the criterion of individual motivation to work, and included students with physical, mental and visual disabilities. The students have been guided by the employees of the SINAPSI center and by e-tutors who help them become familiar with the Moodle program. Other initiatives dealing with complex disabilities are promoted by the Rome Three and Foro Italico universities and the Don Gnocchi Institute.

7. Use of advanced scientific methods

7.1. The pedagogical model

Whereby students are immersed in 3 years of work in which they are present physically or online, fits the epistemological horizon of social constructivism, with an emphasis on group-wide cooperation, peer tutoring and the creation of communities of practice as essential elements in learning processes (Carletti & Varani, 2005). The RUs were involved in creating the conditions necessary for planning inclusive learning environments where students were able to participate in knowledge-building, sharing this experience with their colleagues in a hermeneutic and negotiation-based approach.

The training courses promoted:

- pedagogical and technological strategies for the development of emotional interdependence, the relational and functional achievements of individuals and groups;
- the ability to communicate through the forum, to share goals with colleagues and to coordinate action plans with them in a structured learning environment that can offer active and intelligent pathways.

For example, undergraduate and graduate students at the “Foro Italico” University’s Physical Education faculty were initially invited to think about their personal disability-related experiences, aiming to reinterpret situations of the past in the light of knowledge and experience. The students’ reconstruction of the past and reflection on their experiences and their existential and professional trajectories enabled them to give meaning and value to integrating a learning experience, thoughts, emotions and actions in a broader dynamic of meaning based on a cognitive apprenticeship in which one studies together with other people and learns from them. The training courses were designed to take into account the level of expertise in special-education topics (knowledge of their epistemological and historical evolution and of the process of school integration in Italy and Europe, construction of an integrating background, and the ability to adopt educational strategies like empowerment in teaching-learning processes) by applying special devices based on the reconnaissance configuration of access to knowledge. The activities of metacognitive narrative and guided discussion on Special-Education topics, targeted specifically at students in the undergraduate program, were added later on, together with

academic degree courses, structured group activities that analyze various entities located throughout the country, and the elaboration of pro-inclusion activities.

The students were divided into groups of up to four members so as to ensure the control and management of work and of cognitive and emotional differentiations. Each of the groups thus formed had to choose a local plan regarding a situation present in the country, and to analyze the relevant document by means of a structured survey grid provided by the teacher. To complete the analysis, the working groups used Wiki software for shared writing. This tool allowed group members to work asynchronously, in the absence of space and time constraints, and to put their fellow members' thoughts to use by acting directly on the document. Professors and e-tutors guided the activities by providing structured and formalized instructions through the forum tools, by constantly monitoring individual and group actions, and by encouraging the climate of positive interdependence. In the second phase of the work, and unlike in the first experimental year, the Foro Italico University decided to involve students in the production of an inclusive project to meet the region's previously identified needs, with the aim of highlighting the contributions of individual and collaborative work to the quality of learning.

The reflection on practice, combined with the comparison of the students' evaluation at the end of the experimentation, showed how collaborative learning has a positive influence on the quality of learning, responding to students' need to be recognized and at the same time to belong to a community. The treatment of specific subjects in a structured learning environment influences contexts by evaluating the resources of each person according to his/her possibilities and by extending their current areas of development. The survey tools used included observation of the situation by e-tutors and by the disability-support services of the universities involved. The findings of the research carried out at the "Foro Italico" university showed that for the undergraduate program in Physical Education (L33), the positive evaluation indicator (PVI) rose 14% from 2009–2010 to 2010–2011. The PVI is built on an upward scale (very negative evaluation = 1, very positive evaluation = 4) and is calculated as the sum of two positive frequencies: "more yes than no" and "definitely yes" (3 +4). The mid-term evaluation of the project found a very positive assessment of the items of integrative teaching/learning activities (PVI = 90.1%), completeness of the responses of professors and e-tutors to requests for clarification (PVI = 92.9%), availability of e-tutors and professors, and extended contact through the online work environment (PVI = 94.4%). The experience also showed how the program facilitated students' success in the first exam session: 85% of the students who attended classes achieved good results in the winter session and in the special session in April.

7.2. Program's management and the applications

The program's management and the applications offered by Web 2.0 technologies supported the teaching strategies, ensuring openness, support and constant monitoring of about 27 types of courses, sessions and seminars. A result of this effort is its presence in the network. By April 2011 it had reached 72 professors and tutors and 1280 students, while by the end of the project it had reached 2297 students and 89 teachers, of whom 33 were tutors. The technology-monitoring action focused on login checking, helping individual users in case of difficulty with the account, validating teachers and providing tools for teaching online. For every aspect of the program, Moodle offers a range of dedicated instruments from which users must choose. Regarding login checking, daily reports on attendance at individual courses and on the specific environment were taken into consideration. In cases of forgetfulness or loss of credentials, support was offered through direct email access for readmission to the program, and a basic configuration was established for activities planned as part of the online learning program, thanks to which it was possible to organize transversal activities. The Rome Three University RU customized the "Database" activity in the Moodle open source e-learning program with footage from narrative film documentation that showed cases of inclusion and exclusion. According to the most sophisticated scientific literature in this field, footage from a narrative film can be interpreted as a prism that encloses the multiple facets of the film from which it was taken (as is documented by Alain Bergala in an essay titled *Film Theory*) (Cineteca di Bologna, 2009). The Rome Three RU defined a method that uses footage and fields to illustrate the concept of inclusion. The feasibility of this

methodological approach was verified through a modeling setup operating in the context of Moodle workshop activities dedicated to the advanced level, where:

- states the network address of the link where the relevant footage can be found;
- contains data on the film in question (the original aspect of the model lies in the definition of additional fields of record characterization);
- describes the scene considered;
- contains a list of tags (the keywords to be used to search the records);
- contains a written description of the film footage so that people with visual disabilities can understand it with the aid of a screen reader;
- is a free field on which users can enter their own comments.

The setup is based on a range of research and experience gained in student activities at different universities, and aims to raise awareness of inclusion issues. The Cinema and Inclusion database was enriched with the help of tutors and students. Over the 6 months following the networking, the database grew larger, adding more than 54 records promoted by various categories of users and spontaneous comments made mostly by students. Thanks to the possibility of customizing the standard database model offered by the Moodle program, an improved interface was proposed to facilitate use of the records. By means of the Cinema and Inclusion database, the culture of teaching and formal learning is integrated with the logic of culture, common sense and entertainment. The combination of technology and pedagogical reflection creates dynamic interplay between the textual and reticular flow in an environment full of interactive resources. The epistemic ego and the psychological ego converge towards technology: the I who knows and the I who's represented by my own mental state are traveling together (Maragliano, 1998).

Implementing the database with experience-based contributions meets the objective of promoting teaching that integrates use and output, cognitive logic and affective, imaginative, projective, sometimes dreamlike logic, fostering the individualization of teaching so as to meet students' specific needs. The Rome Three RU, developing frameworks for training, thought about the structure, time and space of learning – learning by promoting the mutual transition between formal and informal, and choosing a teaching method based on collaboration, integration and contamination (Gardou, 2006).

7.3. Idea of promoting advanced scientific methodologies

With the idea of promoting advanced scientific methodologies, the University of Naples RU created a mechanism to identify different relational and individual learning styles. On the basis of Gardner's *Theory of Multiple Intelligences* (Gardner, 1987, 2005), Sternberg's *Theory of Mental Self-Government* (Sternberg, 1998) and De La Garanderie's *Construct of the Pedagogical Native* (De La Garanderie, 1999), a questionnaire was devised on learning styles, with a special grid for self-evaluation. Each student, starting by comparing his/her own experiences with those of other students, could reflect on diversity as an existential condition that characterizes each individual. In order to meditate on the culture of inclusion and the meaning of the concept of *disability*, a concept map called "Navigating Disability" was added in the area dedicated to students. It was completed with materials and media that enable students to explore and to deepen their knowledge of pathways related to the thematic issues of inclusion. On this map, the metaphor of navigation (widely used in computer science) indicates the exploration of content and activities located on the network, with the intent of accompanying students in their studies. The map is always accessible with the help of keywords, which, like the cardinal points, steer the navigation route. The content and activities proposed on the map were prepared taking into account the accessibility requirements of the communication.

Already functioning:

- devices that recognize the cognitive and affective characteristics of relational and individual learning styles with the help of ad hoc instruments;
- devices that recognize patterns of access to knowledge;

- devices that accompany use of the program by students with different types of disabilities;
- tools for evaluating the abilities, skills and knowledge learned from tutors during the training program.

Now being modeled:

- media facilitation devices and measures (including the planning of equivalent pathways) necessary for the creation of "intermediate areas of learning" within which students can develop and reorganize disciplinary knowledge as a function of a transfer in an operational setting through simulations, role playing and scenarios;
- devices for monitoring the quality of learning processes and knowledge-building;
- equipment for evaluating skills in input and output;
- equipment for evaluating disciplinary learning and cross-learning;
- levels of monitoring devices and methods of communication and interaction in support of learning processes and knowledge-building;
- an e-portfolio with multiple areas of access and input data for learning the subject, which enable users to track the learning process systematically in terms of knowledge-building and of monitoring and assessing skills;
- equipment for monitoring and analyzing levels of empowerment and well-being (in collaboration with Partenope University, Naples);
- communication devices in learning environments for university students who have serious disabilities (in collaboration with the Don Gnocchi Institute); and
- construction of devices for the assessment and evaluation of learning and of the quality of individual learning processes.

Because of the need to prepare a set of tools for supporting, monitoring and evaluating the quality of student learning processes in different environments and settings, guidelines were drafted to design, test and validate them, based on the identification of student profiles.

The data collected on an exploratory sample of students showed a prevalence of the holistic style of teaching and interpersonal intelligence, which represents a mutual learning program for various training programs. Upon observing a number of students at the Foro Italico University, researchers found that many of them had a bodily-kinesthetic intelligence combined with a logical-mathematical one. This raised the possibility of a meaningful match among cognitive learning styles, prevailing teaching methods and training choices.

Exploration of cognitive configurations has led researchers to reflect on how we function as learners, how to build on this knowledge and understanding, and how to develop ways of learning that can maintain individuals' cognitive profiles. How the students learned their mother tongues is also significant in this regard (De La Garanderie, 1991). The second reason why it is important to have knowledge of the cognitive configuration is more complex. Each course of study and discipline, depending on its epistemic structure, insists on one form of intelligence more than on others. This means, firstly, that individuals with certain types of intelligence may have more difficulty in studying; and secondly, that accessing a particular field of knowledge is not an impossible task, but the process must follow a long road and the students must be able to find (thanks to the teacher) the peculiarities of the discipline's epistemic structure and, while studying, to "translate" it in terms of their own frame of mind, to understand it thoroughly and ultimately to re-translate the understanding reached on the terms of the specific discipline. The transition from reflection on us is particularly significant to promote in students an awareness of the diversity of each and every person in the unique configuration and cognitive learning experience. On this basis it becomes possible to start a process of reflection on disability issues.

As part of the planning methods and learning strategies, the University of Naples arranged inclusive devices accessible for all, allowing everyone to recognize his or her specificity. In particular, the RU created a concept map and a program. Just as a road map serves to get one's bearings, a concept map is a tool for interpreting, editing and transmitting knowledge, information and data through the graphic grid of communication content. With reference to Novak's studies (Novak, 2001; Novak & Gowin,

1989) and to Ausubel's theory of meaningful learning (Ausubel, 1962), the "Navigating disability" concept map was drawn around multiple conceptual issues (represented by keywords) related to the central theme of disability. Each keyword is presented with a label that introduces the concept through questions intended to stimulate students to take a critical and reflective approach to knowledge. Each node consists of a conceptual network of multimedia content, information and texts (movies, site links and songs) that do not cover every inch of the subject but are supposed to be starting points for research and self-learning. Based on this model, the students created their own concept maps and shared them with all the other users of the program, deploying both educational materials already available (in different areas of the project) and new materials found by individuals and/or groups.

From among the existing applications for creating concept maps, we chose to CmapTools, which was developed by Cornell University and the Institute for Human and Machine Cognition of the University of West Florida. CmapTools is the application closest to Novak's theory and the most widespread system of computer support for the creation of concept maps in education (http://cmap.ihmc.us/).

The model of study is integrated with elements derived from the most advanced computer models that support collaborative learning (Stahl, Koschmann, & Suthers, 2006) and from the Community of Inquiry model proposed by Garrison and Anderson (Garrison & Anderson, 2003; Richardson & Swan, 2003). The term "Study Circle" refers to a procedure widely used in northern Europe, where people gather in informal groups to study and explore topics and issues of common concern, free from the constraints that formal learning contexts impose (Oliver Leonard, 1987; Del Gobbo, 2005; Guetta & Del Gobbo, 2005; Larsson & Nordvall, 2010). Circle participants have the possibility of managing schedules and methods of conducting activities by themselves; the participation of external experts is shortened to a limited number of hours and tutorials; workshops and practical activities can be scheduled. In accordance with a constructivist and cooperative learning model, such circles offer an opportunity for participants to manage their own learning processes independently, based on the logic of continuous lifelong learning. From the standpoint of education and teaching, the study circle is an innovation that within a self-learning space can meet members' specific educational needs. Generally speaking, study circles are places of physical interaction. As part of the program, study circles can be seen as virtual meeting places where, in addition to discussions on topics of interest, members can share and co-construct products of knowledge and learning, and use blogs and diaries. Taking into account the aims and methodology of the study circle and the internal organization of platform content and activities, the circles can be usefully placed in the common area as a further opportunity to meet and discuss.

The issues to be discussed in the circles are proposed by the teachers involved in the courses or are identified by the students on the basis of their own interests. The study sessions are open to all program participants; even people who are not taking part in the program can have access to sessions if they are invited by and have the same interests as the regular participants. Access is restricted exclusively to the circle meetings.

8. Verifications and conclusions

The qualitative survey referred primarily to the following.

8.1. The planning approach

This examined the cognitive domain that belongs to the online environment, namely identification of the type of domain (formal/non-formal, highly structured/unstructured), the underlying educational theory and the focus of the learning process (students, context, content, technology).

8.2. The educational purposes

This analyzed the results of the online training course; i.e., the respondents' positive or negative evaluations of the course in terms of expectations, motivations, organization of working sessions, innovation, and acquired knowledge and skills. Such evaluations judge the creation, organization and structure of a space for action aimed at stimulating and supporting cultural differences, together with the promotion and development of knowledge, skills, peer relationships and substantially prosocial

mutual help, where the establishment of communities of practice and online learning is supplemented by the methodological possibilities of the development of partnerships and co-construction of knowledge and interactive modes of communication.

8.3. Tutoring

This aspect took into account the role played by tutors in the online learning environment, seeking to arrive at an initial description of the skills necessary for anyone involved in the integration processes in multimedia environments, and to define the value-added tasks of tutors, who support and accompany students on the network; this role is comparable to the integrated process of scaffolding.

8.4. Interaction and educational relationships

Interaction and educational relationships structured for all participants in the process of teaching/learning through the use of methodologies and teaching strategies that ensure the participation of everyone, without exception; and analysis of the educational forum, its role model and teaching tools, with all the features needed to support and encourage this process of helping students to learn.

From the methodological point of view, we proceeded to:

- identify for each subject area the variables/levels to be considered;
- build a database structured so as to enable inferential analysis;
- complete the analysis of data and information.

To verify accessibility, reference was made to the most important international standards (in particular WCAG 1.0 and WCAG 2.0 W3C) and Italian legislation (Law 4/2004 and Ministerial Decree dated July 25, 2005). The guidelines for designing the content of the Moodle program were revised; they now contain important information for teachers and, more generally, for anyone who needs to put information on the Moodle program that could be useful for people with disabilities. In addition, the Don Gnocchi RU collaborated on a feasibility study of the integration functions of software designed to facilitate communication and access to appropriate learning environments for students with complex disabilities.

The project management thought that online courses should be made available at the universities of France and Brazil with the aid of French, Spanish and Brazilian colleagues. These academics too are involved with students with disabilities who may be interested in using the materials included in the program in a future research and training project.

The analysis of the results thus shows that the innovation promoted by the project consists of developing and increasing the efficiency of an education/training process that requires structural changes, by means of a systemic approach to a number of interrelated processes, with possible transfers within the universities involved and also to external users living in the same area:

- a bottom-up approach to the development of training programs designed to meet needs emerging at universities;
- a new organization as a necessary step to create fertile ground for the growth of university courses and services through the inclusive development of subjects, activities, facilities and services that will offer more opportunities;
- an advanced scientific teaching methodology through the testing of an integrated package of training courses available and accessible online, and the customization of a communication program that allows users to interact directly with other academic systems and to use and/or provide resources;
- development of an inclusive standardized reporting system that improves a quality-assurance process involving all students attending universities that have all the necessary organizational and structural tools and materials to prepare training programs even in situations where special needs are present;
- creation of an inclusive educational model of cooperation and learning that is configured as a co-designed space within which both students and tutors can receive significant training, understood

as Situated Learning, where complexity is considered crucial to represent the world and the cognitive structuring of its fields. This model prevails in a logic of communicative relationship, of the community of conversation and practice, which are the central processes of integration.

References

Anandarajan, M. (2010). *E-research collaboration: Theory, techniques and challenges*. Heidelberg: Springer.
Anderson, T., & Kanuka, H. (2003). *E-research. Methods, strategies and issues*. Boston: Allyn and Bacon.
Ausubel, D. P. (1962). "A subsumption theory of meaningful verbal learning and retention". *Journal of General Psychology*, *66*, 213–244.
Canevaro, A. (2001). *Pedagogia speciale*. Padua: CEDAM.
Canevaro, A. (Ed.). (2008a). *L'integrazione scolastica degli alunni con disabilità*. Trento: Erickson.
Canevaro, A. (2008b). *Pietre che affiorano*. Trento: Erickson.
Canevaro, A., Lippi, G., & Zanelli, P. (1988). *Una scuola uno sfondo. Sfondo integratore, didattica e complessità*. Nicola Milano: Bologna.
Carletti, A., & Varani, A. (2005). *Didattica costruttivista. Dalle teorie alla pratica in classe*. Trento: Erickson.
de Anna, L. (2007). "La formazione degli insegnanti e i sette moduli". *L'integrazione scolastica e sociale*, *6/5*, 437–453.
de Anna, L. (Ed.). (2009). *Processi formativi e percorsi di integrazione nelle scienze motorie*. Milan: Franco Angeli.
De La Garanderie, A. (1991). *I profili pedagogici: Scoprire le attitudini scolastiche*. Florence: La Nuova Italia (italian translation of *Les profils pedagogiques: discerner les aptitudes scolaires*. Paris: Le Centurion, 1980)
De La Garanderie, A. (1999). *Apprendre sans peur*. Lyon: Chronique sociale.
Del Gobbo, G. (2005). *Da diritto all'istruzione a diritto al lifelong learning. Una riflessione. "LLL. Focus on Lifelong Learning" Firenze, EdaForum Nazionale, anno I /N2*.
Gardner, H. (1987). *Formae Mentis. Saggio sulla pluralità dell'intelligenza*. Milan: Feltrinelli (italian translation of *Frames of mind. The theory of multiple intelligences*. New York: Basic Books, 1983).
Gardner, H. (2005). *Educazione e sviluppo della mente. Intelligenze multiple e apprendimento*. Trento: Erickson.
Gardou, C. (2006). *Diversità, vulnerabilità e handicap. Per una nuova cultura della disabilità*. Trento: Centro Studi Erickson.
Garrison, R., & Anderson, T. (2003). *E-learning in the 21st century: A framework for research and practice*. London: RoutledgeFalmer.
Ghislandi, P. (2012). "adASTRA: A rubrics set for quality e-learning design". In P. Ghislandi (Ed.), *e-learning: Theories, design, software, applications* (pp. 91–106). Rijeka: InTech - Open Access Publisher.
Guetta, S., & Del Gobbo, G. (2005). *I Saperi dei Circoli di Studio*. Pisa: Del Cerro.
Larsson, S., & Nordvall, H. (2010). *Study circles in Sweden: An overview with a bibliography of international literature*. Linköping: Linköping University Electronic Press.
Maragliano, R. (1998). *Manuale di didattica multimediale*. Roma-Bari: LaTerza.
Maragliano, R. (2011). *Adottare l'e-learning a scuola*. Rome: Garamond-Bookliners.
Novak, J. (2001). *L'apprendimento significativo*. Trento: Erickson.
Novak, J. D., & Gowin, D. B. (1989). *Imparando ad imparare*. Turin: SEI.
Oliver Leonard, P. (1987). *Study circles: Coming together for personal growth and social change*. Washington, D.C.: Seven Locks Press.
Rheingold, H. (1994). *Comunità virtuali. Parlare, incontrarsi, vivere nel cyberspazio*. Milano: Sperling & Kupfer.
Richardson, J., & Swan, K. (2003). "Examining social presence in online courses in relation to students' perceived learning and satisfaction". *JALN*, *7*(1), 68–88.
Rotta, M., & Ranieri, M. (2005). *E-tutor, identità e competenze. Un profilo professionale per l'e-learning*. Trento: Erickson.
Salmon, G. K. (2002). "Mirror, mirror on my screen: Exploring online reflections". *British Journal of Educational Technology*, *33*(4), 379–391.
Stahl, G., Koschmann, T., & Suthers, D. (2006). "Computer-supported collaborative learning: An historical perspective". In R. K. Sawyer (Ed.), *Cambridge handbook of the learning sciences* (pp. 409–426). Cambridge: Cambridge University Press.
Sternberg, R. (1998). *Stili di pensiero*. Trento: Erickson (italian translation of *Thinking Styles*, Cambridge: Cambridge University Press, 1997).
Wenger, E. (2006). *Comunità di pratica. Apprendimento, significato e identità*. Milan: Cortina.

Further reading

Abruzzese, A., & Maragliano, R. (2008). *Educare e comunicare. Spazi e azioni dei media*. Milan: Mondadori Università.
Bonaiuti, M. (Ed.). (2002). *Conversazioni virtuali. Come le nuove tecnologie cambiano il nostro modo di comunicare con gli altri*. Milan: Guerini.
Bonaiuti, G. (Ed.). (2006). *E-learning 2.0*. Trento: Erickson.
Calvani, A. (2005). *Rete, comunità e conoscenza*. Trento: Erickson.
Canevaro, A. (Ed.). (1999). *Handicap e scuola. Manuale per l'integrazione scolastica*. Rome: Carocci.
Canevaro, A. (2006a). "Accompagnare nel progetto di vita". *L'integrazione scolastica e sociale*, *5/4*, 331–339.
Canevaro, A. (2006b). *Le logiche del confine e del sentiero*. Trento: Erickson.
Canevaro, A., & Chieregatti, A. (2003). *La relazione di aiuto*. Rome: Carocci.
Canevaro, A., & Goussot, A. (2005). *La difficile storia degli handicappati*. Rome: Carocci.
Canevaro, A., d'Alonzo, L., & Ianes, D. (Eds.). (2009). *L'integrazione scolastica di alunni con disabilità dal 1977 al 2007*. Bolzano: Bozen-Bolzano University Press.
de Anna, L. (1998). *Pedagogia speciale*. Milan: Guerini.

de Anna, L. (2010). "Formazione degli insegnanti e disabilità nelle scienze motorie e sportive". In L. Milani (Ed.), *A Corpo libero. Sport, animazione e gioco*. Milan: Mondadori Università.
de Anna, L. (2011). "L'identità della persona con disabilità nella Convenzione ONU del 2006: Evoluzione storica attraverso i documenti internazionali". In A. Mura (Ed.), *Pedagogia Speciale oltre la scuola. Dimensioni emergenti nel processo di integrazione*. Milan: Franco Angeli.
de Anna, L., & Della Volpe, V. (2011). "Il progetto FIRB Rete@ccessibile. La costruzione di una dimensione internazionale per un e-learning inclusivo". *L'integrazione scolastica e sociale*, *10/3*, 254–266.
Dewey, J. (1961). *Come pensiamo. Una riformulazione del rapporto tra pensiero riflessivo ed educazione*. Florence: La Nuova Italia (italian translation of *How we think*, Boston: D. C. Heath & Co, 1910).
European Commission. (2011). COM (2011) 808. In *"Horizon 2020 – Framework Program of Research and Innovation"* Brussels.
Fiorentino, S. (Ed.). (2010). *Integrazione e Inclusione: Modelli a confronto*. Milan: Franco Angeli.
Friso, G., Palladino, P., & Cornoldi, C. (2006). *Avviamento alla metacognizione*. Trento: Erickson.
Garrison, D. R., Anderson, T., & Archer, W. (2000). "Critical inquiry in text-based environment: Computer conferencing in higher education". *The Internet and Higher Education*, *2*(2–3), 87–105.
Ghislandi, P., & Cumer, F. (2011). "Le rubric di qualità didattica per il sito Rete@ccessibile". In *Proceedings of the 7th SIe-L Conference (Italian e-Learning Society)* Reggio Emilia, 14–16 September 2011.
Maragliano, R. (2004). *Nuovo manuale di didattica multimediale (with CD ROM)*. Rome-Bari: Laterza.
Maragliano, R. (2008). *Parlare le immagini. Punti di vista*. Milan: Apogeo.
Mura, A. (2011). "L'accessibilità: Considerazioni teoriche e istanze operative". In A. Mura (Ed.), *Pedagogia speciale Oltre la scuola. Dimensioni emergenti nel processo di integrazione* (pp. 40–60). Milan: Franco Angeli.
Pavone, M. (2010). *Dall'esclusione all'inclusione. Lo sguardo della pedagogia speciale*. Milan: Mondadori Università.
Roche, R. (2002). *L'intelligenza prosociale*. Trento: Erickson.
Rosenberg, M. J. (2000). *E-learning: Strategies for delivering knowledge in the digital age*. London: McGraw Hill.
Santoianni, F., & Striano, M. (2003). *Modelli teorici e metodologici dell'apprendimento*. Rome-Bari: Laterza.
Shirky, C. (2009). *Uno per uno, tutti per tutti*. Turin: Codice Edizioni (Italian translation of *Here comes everybody: The power of organizing without organizations*. New York: Penguin Books, 2008).
Striano, M. (2006). "La pratica riflessiva nei contesti educativi e formativi". In P. De Mennato (Ed.), *Progetti di vita come progetti di formazione* (pp. 35–50). Pisa: ETS.
Striano, M. (2010). "Comunità di pratiche e sviluppo professionale". In G. Alessandrini, & M. Buccolo (Eds.), *Comunità di pratica e pedagogia del lavoro. Un nuovo cantiere per un lavoro a misura umana* (Vol. I) (pp. 99–112). Lecce: Pensa Multimedia.
Striano, M. (Ed.). (2010). *Pratiche educative per l'inclusione sociale*. Milan: Franco Angeli.
Striano, M., Fiorentino, S., Freda, C., & Romano, D. (2011). "Apprendere ed incontrarsi in un ambiente Web 2.0 accessible e interattivo". In P. Valerio (Ed.), *Il viaggio dell'inclusione* (pp. 51–54). Naples: Ateneapoli Editore.
Weinberger, D. (2010). *Elogio del disordine. Le regole del nuovo mondo digitale*. Milan: Bur-Rizzoli (Italian translation of *Everything is miscellaneous: The power of the new digital disorder*. New York: Times Books, 2007).
Vygotskij, L. S. (1974). *Storia dello sviluppo delle funzioni psichiche superiori e altri scritti*. Florence: Giunti (italian translation of *Istorija razvitija vissich psihiceskih funktcij*. Moskva: Akademija Pedagogiceskich, 1960).
World Health Organization. (2002). *ICF: International classification of functioning, disability and health, ita trans. OMS (2002). ICF – Classificazione Internazionale del Funzionamento della Disabilità e della Salute*. Trento: Erickson (italian translation of *ICF: International classification of functioning, disability and health*. World Health Organization, 2001).